REMARKS UNDER 37 CFR § 1.111

Formal Matters

Claims 8-29 and 51-58 are pending after entry of the above amendments.

Claims 8-29 and 51-58 were examined. Claims 8-29 and 51-58 were rejected.

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

The Office Action

Claims Rejected Under 35 U.S.C. Section 101

In the Official Action of August 1, 2008, claims 18-29 and 51-58 were rejected under 35 U.S.C. Section 101 as being directed to non-statutory subject matter. The Examiner asserted that the claims were directed to software per se and to functional descriptive material, per se. Although Applicants do not agree with this ground of rejection, and do not acquiesce thereto, since structural descriptions of at least some of the elements of claim 8 are described in the specification (e.g., a display is not software), Applicants have nevertheless amended claim 8 to still further clarify that the system claimed is not a claim purely to software. As amended, claim 8 includes a processor. Also means for displaying has been changed to a "display" for displaying. Claim 58 has been amended similarly. It is respectfully submitted that claims 8 and 58, as amended is clearly directed to structure other than just software, per se, and as such, the claims are directed to patentable subject matter.

In view of the above remarks and the amendments to the claims, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 18-29 and 51-58 under 35 U.S.C. Section 101 as being directed to non-statutory subject matter under 35 U.S.C. Section 101, as being inappropriate.

Claims Rejected Under 35 U.S.C. Section 103(a) (Infanti in view of AAPA and Excel (Kraynak))

Claims 8-11, 18-23, 26-29, 51-53 and 54-57 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of "Applicant's Admitted Prior art" (AAPA) in further view of Joe Kraynak (Absolute Beginner's Guide to Microsoft Office Excel 2003, September 11, 2003), referred to by the Examiner as "Excel".

With regard to claim 8, the Examiner asserted that AAPA teaches network diagrams which are used to represent biological activity, wherein biological entities and the relationships between them are represented graphically (page 1, paragraph [0004] of the instant specification).

The Examiner further asserted that Excel (i.e., Kraynak) teaches a local format infrastructural layer configured to transform specific information represented in a text, data or graphical format to one or both of the other text, data or graphical formats that the specific information is not already represented in. More specifically, the Examiner asserted that page 1 of the Excel (Kraynak) document teaches taking data from a spreadsheet and transforming the data to create a chart.

Applicants respectfully submit that Excel (Kraynak) does not provide the capability of transforming specific biological information represented in a text, experimental data or biological diagram format. Claim 8 has been amended to more clearly recite these formats. Further, claim 8 has been amended to recite that the local format infrastructural layer transforms specific biological information represented in a text, experimental data or biological diagram ~~graphical~~ format to a local format that provides a common format, such that data from said text format, said experimental data forma and said biological diagram format are all representable in said local format and are exchangeable and useable together. Support for this amendment can be found, for example, at paragraph [0059] and throughout the specification. It is respectfully submitted that none of the cited references, whether taken alone or in any proper combination, discloses teaches or suggests transforming specific information from a text, experimental data or biological diagram format to a local format so that that information is readily useable with the specific biological information having been transformed from the other two recited formats to the local format.

Excel only converts textual, tabular data to a pie chart, line chart or bar graph. The other references are configured to build a network, but do not teach or suggest transforming data from a text, experimental data or biological diagram format to a local format.

Regarding claim 9, the Examiner asserted that Infanti teaches means for connecting common elements of said stencils with assigned specific biological data to display a biological diagram.

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Applicants respectfully traverse, and refer to the Examiner's comments regarding claim 8 where the Examiner admitted that Infanti does not disclose or teach that the data and information is biological data or biological information. Applicants further respectfully submit that the diagram itself serves as a metaphor or context for integrating disparate data, which is neither disclosed nor suggested by the references.

As to claim 18, it is respectfully submitted that Infanti does not teach means for navigating to data selected from said specific biological data for at least the same reason noted above with regard to claim 9.

With regard to claims 19 and 20, it is respectfully submitted that these claims are allowable over the cited art for at least the same reasons provided above with regard to claim 8, since claims 19 and 20 depend from claim 8.

Regarding claim 21, the Examiner referred to pages 113-114 of Infanti and asserted that Infanti teaches means for mapping between said selected stencils containing specific biological data and an existing biological diagram. Applicants respectfully traverse. Although the pages referred to disclose embedding and linking Visio files, there is no disclosure of specific biological data, existing biological diagrams, or mapping between stencils and an existing biological diagram.

Regarding claim 23, Applicants respectfully submit that Infanti clearly fails to teach means for merging stencils with a biological network, or means for displaying said stencils merged with said biological network, contrary to the Examiners assertions. The Examiner admitted that Infanti fails to disclose or teach that the data and information that is biological data or biological information, and it logically follows that Infanti also therefore fails to disclose or teach means for merging stencils with a biological network, or means for displaying said stencils merged with said biological network.

Likewise, with regard to claim 26, it is respectfully submitted that Infanti clearly fails to teach means for linking the displayed stencils with other source of biological data. It is further respectfully submitted that Infanti fails to teach use of a local formatting language as claimed, for reasons already noted above. Because the present invention transforms the data of all types, displays of data can be readily linked. For example text form a textual document can be readily linked to a display of a biological diagram and experimental data from a display of experimental data, such as in tabular or matrix form, for example, can be readily linked to the biological diagram and/or textual document. None of the applied references converts data from different formats into a local format so that the data from these different formats can be readily combined, linked, etc.

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As to claim 29, it is respectfully submitted that pages 63 and 64 clearly do not disclose overlaying annotations on a biological diagram, contrary to the Examiner's assertions.

As to claim 51, it is respectfully submitted that none of Infanti, AAPA, or Excel, whether taken alone or in any proper combination, teaches, suggests or discloses graphical elements comprising biological semantics representative of a particular type of biological entity or interaction. The Examiner has already admitted that Infanti does not disclose or teach that the data and information that is biological data or biological information. Neither AAPA nor Excel discloses graphical elements comprising biological semantics representative of a particular type of biological entity or interaction. Still further, none of the applied references transforms data from different formats to a local format, as noted above.

As to claim 52, it is respectfully submitted that none of Infanti, AAPA, and Excel, whether taken alone or in any proper combination, teaches, discloses or suggests representing a visual grammar in a local format, for reasons already noted above. Contrary to the Examiner's assertion, Infanti does not provide the information in a local format. Although shapes can be dragged to a Visio document, textual data must first be formatted to be place in text boxes, see p. 62. Although visio data can be embedded into another application document, it is not in a local format and thus is not simply combined or merged with that other application document, but must be embedded.

Regarding claim 53, Applicants traverse the Examiner's assertion that Infanti teaches said slots are filled with specific biological information, as this is contrary to the Examiner's earlier admission that Infanti does not disclose or teach that the data and information is biological data or biological information. It is further respectfully submitted that Infanti does not use a local format as claimed, for reasons noted above, and that pages 63-64 of Infanti do not disclose automatically adding biological information to a local format, but only disclose entering text into a shape. There is no disclosure of conversion of the text to a local format. Quite to the contrary, text must be formatted before filling it into a text box as noted on page 62. Since this formatting is required, it is clear that the text has not been previously converted to a local format that is readily combinable with data from biological diagrams and experimental data. Further, if a user wanted to use the data appearing as text in a text box of the Visio display for use in a textual document, the user would presumably again need to format the data as it is not in a local format. Still further, the Examiner asserted that specific biological information is automatically added to the local format, and the Infanti teaches this at pages 63-64. Applicants strongly traverse. Pages 63-64 clearly indicate that the user must "double-click a shape to open its text box" and

then type to add or edit text, see the last three line of page 63. Clearly this is not automatic entry, nor is it entry of specific biological information whatsoever.

Regarding claim 54, it is respectfully submitted that none of Infanti, AAPA or Excel, whether taken alone or in any proper combination, discloses, suggests, or pertains to stencils existing at multiple levels of abstraction, ranging from molecular interaction to higher-level biological concepts. The Examiner referred to page 148 of Infanti. However, page 148 of Infanti discloses nothing about stencils provided for levels of abstraction ranging from molecular interaction to higher-level biological concepts. Rather, page 148 merely discloses that stencil files can be modified to add more shapes, remove shapes and edit existing shapes.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 8-11, 18-23, 26-29, 51-53 and 54-57 under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of "Applicant's Admitted Prior art" (AAPA) in further view of Joe Kraynak (Absolute Beginner's Guide to Microsoft Office Excel 2003, September 11, 2003), referred to by the Examiner as "Excel", as being inappropriate.

Claims Rejected Under 35 U.S.C. Section 103(a) (Infanti in view of AAPA, Excel (Kraynak) and Flowtronex

Claims 12-17 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of "Applicant's Admitted Prior art" (AAPA) in further view of Joe Kraynak (Absolute Beginner's Guide to Microsoft Office Excel 2003, September 11, 2003), referred to by the Examiner as "Excel", as applied to claim 8 above, and further in view of Flowtronex - Apprentice Systems – Microsoft Case Study (August 2001).

Regarding claim 12, the Examiner admitted that Infanti does not teach data that is biological data or designing and associating rules with stencils. The Examiner asserted that Excel (Kraynak) teaches a local format infrastructural layer. As noted above with regard to claim 8, Excel (Kraynak) fails to convert data from different formats into a local format so that these data are readily useable together in either a text, biological diagram, or experimental data display. The Examiner asserted that Flowtronex teaches an overlay onto Visio that designs and applies rules to Visio shapes. The Examiner further asserted that it would have been obvious to combine the system of diagramming biological data of Infanti in view of AAPA and Excel with the designing and applying of rules to Visio master shapes to

eliminate manual processing by creating an automatic process.

Applicants respectfully traverse. For reasons provided above with regard to claim 8, it is respectfully submitted that it would not have been obvious to combine AAPA and Excel with Infanti in the manner described by the Examiner, or that even if combined as suggested by the Examiner, the combination would still lack "a local format infrastructural layer executable by said processor and configured to transform specific biological information represented in a text, experimental data or biological diagram format to a local format that provides a common format, such that data from said text format, said experimental data forma and said biological diagram format are all representable in said local format and are exchangeable and useable together", since none of those references discloses teaches or suggest such a local format infrastructural layer as claimed. Further, it is respectfully submitted that Flowtronex also fails to make up for this deficiency of the other three applied references.

Since claims 12-17 depend from claim 8, it is respectfully submitted that these claims are allowable over the applied art of record, for at least the same reasons that claim 8 patentable defines over the applied art of record.

With regard to claim 15 it is respectfully submitted that none of the applied references suggest rule checking rules against a pre-existing biological diagram. Likewise, none of the references disclose or suggest rule checking rules against experimental data, as recited in claim 16.

Regarding claim 17, the Examiner indicated that Flowtronex teaches an overlay onto Visio that designs and assigns rules to Visio shapes. However, claim 17 depends from claim 12. Claim 12 recites means for designing and associating rules with said stencils. Claim 17 further recites means for overlaying results of rule checking on a network diagram. It is respectfully submitted that Flowtronex lacks any disclosure of overlaying results of rule checking on anything, much less a network diagram. It is further respectfully submitted that Infanti, AAPA and Excel also fail to disclose this feature.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 12-17 under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of "Applicant's Admitted Prior art" (AAPA) in further view of Joe Kraynak (Absolute Beginner's Guide to Microsoft Office Excel 2003, September 11, 2003), referred to by the Examiner as "Excel", as applied to claim 8 above, and further in view of Flowtronex - Apprentice Systems – Microsoft Case Study (August 2001). as being inappropriate.

Claims Rejected Under 35 U.S.C. Section 103(a) (Infanti in view of Macrae et al. and Artymuik et al.)

Claims 24-25 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of "Applicant's Admitted Prior art" (AAPA) in further view of Joe Kraynak (Absolute Beginner's Guide to Microsoft Office Excel 2003, September 11, 2003), referred to by the Examiner as "Excel", as applied to claim 8 above, and further in view of Artymuik et al., "The Use of Graph Theoretical Methods for the Comparison of the Structures of Biological Macromolecules, 1995).

The Examiner asserted that it would have been obvious to include the use of graph theoretic methods to compare a plurality of stencils for examining and comparing of macromolecular structures.

Applicants respectfully submit that Artymuik et al. does nothing to make up for the deficiencies of deficiencies of Infanti, AAPA and Excel in meeting claim 8, since Artymuik et al. also fails to disclose or suggest "a local format infrastructural layer executable by said processor and configured to transform specific biological information represented in a text, experimental data or biological diagram format to a local format that provides a common format, such that data from said text format, said experimental data forma and said biological diagram format are all representable in said local format and are exchangeable and useable together". Further, since claims 24-25 depend from claim 8, it is respectfully submitted that these claims are allowable over the applied art of record, for at least the same reasons provided above with regard to claim 8.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 24-25 under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of "Applicant's Admitted Prior art" (AAPA) in further view of Joe Kraynak (Absolute Beginner's Guide to Microsoft Office Excel 2003, September 11, 2003), referred to by the Examiner as "Excel", as applied to claim 8 above, and further in view of Artymuik et al., "The Use of Graph Theoretical Methods for the Comparison of the Structures of Biological Macromolecules, 1995), as being inappropriate.

Conclusion

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application,

please telephone the undersigned at 408-736-3554.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10030635-01.

Respectfully submitted,

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